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REVIEW OF THE SOUTHEASTERN ASIAN SAWFLY GENUS *ANAPEPTAMENA* KONOW (HYMENOPTERA: TENTHREDINIDAE)

MALKIAT S. SAINI, DAVID R. SMITH, AND TAJINDER P. SAINI

(MSS, TPS) Department of Zoology, Punjabi University, Patiala—147002, India (e-mail: saini20@glide.net.in); (DRS) Systematic Entomology Laboratory, PSI, Agricultural Research Service, U.S. Department of Agriculture, c/o National Museum of Natural History, Smithsonian Institution, Washington, DC 20560-0168, U.S.A. (e-mail: dsmith@sel.barc.usda.gov)

Abstract.—*Anapeptamena* Konow (Tenthredinidae: Selandriinae) has been known only by its type species, *A. albipes* Konow, from India and Myanmar. Two new species have been discovered from India and are described: ***Anapeptamena darjeelingensis*, n. sp.**, and ***A. dhanoultiensis*, n. sp.** A male of the genus, that of *A. dhanoultiensis*, is described for the first time. Descriptions, illustrations, and a key are provided for identification of the species.

Key Words: India, Myanmar, Selandriinae

Intensive survey work in India by the first author has documented a large number of new records and resulted in the discovery of many undescribed sawflies. Many genera considered monotypic or to include few species have been found to be much larger and more diverse than previously thought. Such is the case for *Anapeptamena* Konow, a small genus in the Selandriinae known only from several specimens of a single species from northeastern India and Myanmar. Here we review the genus, describe two new species from India, and give a key to the species. A male of the genus also is described for the first time.

The history of *Anapeptamena* revolves around decisions of synonymy by two authors. A year after Konow (1898) described *Anapeptamena*, Cameron (1899) described the genus *Busarbia*. A year later, Konow (1900) proposed the synonymy of the two genera, and subsequent authors followed Konow's treatment, resulting in a number of additional species in *Anapeptamena*. The distinction between *Anapeptamena* and *Busarbia* was not studied until Malaise (1944) was able to examine the type species. He discovered and enumerated a number of differences between the two genera and thus treated them as separate. Based on Malaise's interpretation, all species described in *Anapeptamena* since Konow's (1900) proposed synonymy belong either to *Busarbia* or other genera. From Malaise (1944) to the present, *Anapeptamena* has remained monotypic. We concur with Malaise's (1944) separation of *Anapeptamena*.

Holotypes are deposited in the National Pusa Collections, Division of Entomology, India Agricultural Research Institute, New Delhi, India. Paratypes are at Punjabi University, Patiala, India (PUNJ) and the National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA (USNM).

Abbreviations used in the descriptions are as follows: EL = eye length; IATS =

inner apical tibial spur; ICD = intercenchral distance; IDMO = interocular distance at level of median ocellus; ITD = intertegular distance; LID = lower interocular distance; MB = metabasitarsus; OATS = outer apical tibial spur; OCL = ocello-occipital line; OOL = oculo-ocellar line; POL = postocellar line.

Anapeptamena Konow

Anapeptamena Konow 1898: 271. Type species: *Anapeptamena albipes* Konow. By monotypy.

Description.—Antenna filiform; apical segments without ventral membranous areas; segments 3 and 4 subequal in length or 3 slightly longer than 4; following segments gradually decreasing in length to apex; pedicel 1.5–2.0× as long as its maximum width and almost as long or as long as scape. Mandible strongly bent, almost at right angle, with a subapical tooth; clypeus subconvexly bent from side to side with its anterior margin subtruncate to slightly circularly emarginate (Figs. 1–3); frontal area poorly defined, not surrounded by an acute, high carina; hind orbits carinate below only, with postgenal carina extending only part way up eye. Lateral furrows fine, diverging backwards, abruptly ending just before hind margin of head. Hind orbits very short, head from above narrowing behind eyes. Epicnemium strongly convex, separated from mesepisternum by a furrow. Mesepisternum in front view obtusely raised without carina, rounded at center. Forewing without anal crossvein; veins M and 1m-cu strongly converging, not parallel; vein Rs more or less faint. Hind wing with two closed cells, Rs and M; anal cell sessile. Metabasitarsus shorter than following tarsal joints combined, as about 5:6. Tarsal claws with long, slender inner tooth, nearly as long as outer tooth, without basal lobe (Figs. 4–6). Head, thorax, and abdomen smooth, shining and impunctate.

Remarks.—Several generic characters are slightly modified from previous characterizations of *Anapeptamena* (Malaise 1944, 1963). These include antennal segment 3 sometimes slightly longer than 4, the two not always equal in length; the anterior margin of the clypeus may be shallowly, roundly emarginate, not always subtruncate; and the frontal area is sometimes distinct due to well defined frontal ridges though not surrounded by a sharp carina and not always completely indistinct.

Anapeptamena may be keyed in Malaise's (1963) key to world genera of Selandriinae. It is distinguished from *Busarbia* (type species, *Busarbia viridipes* Cameron from Khasia Hills, India), the genus with which it has been confused, by the poorly defined frontal area, short postgenal carina on the hind orbits extending only part way up the eye, and the last four antennal segments without ventral membranous areas. *Busarbia* has a distinct, pentagonal frontal area, surrounded by an extremely acute and high carina with a transverse lateral carina to inner margin of each eye, the entire hind orbits with a postgenal carina, and the last four antennal segments with ventral membranous areas which give the segments the appearance of bulging downwards.

Anapeptamena is known only from Myanmar and northeastern India. Food plants are not known, but most Selandriinae feed on ferns.

Key to Species

1. Malar space half diameter of front ocellus; labrum black, tegula white; intertegular distance 3.5× intercenchral distance; lancet not strongly narrowing toward apex, with about 7 serrulae (Fig. 9); . . . . *A. albipes* Konow
– Malar space nearly linear; labrum and tegulae either both white or both black; intertegular distance 4.0× intercenchral distance; lancet either sharply narrowing toward apex (Fig. 10) or with fewer than 7 serrulae (Fig. 11) 2
2. Labrum and tegula white to yellow; clypeus subtruncate, anterior margin of labrum acute (Fig. 2); frontal ridges laterally connected to inner margins of eyes by a low transverse ridge; lancet sharply narrowing toward apex.

with about 8 serrulae (Fig. 10) . . . . *A. darjeelingensis*, n. sp.
- Labrum and tegula black; clypeus shallowly roundly emarginate, anterior margin of labrum rounded (Fig. 3); frontal ridges without transverse ridge to inner margins of eyes; lancet short, not strongly narrowing toward apex, with about 6 serrulae (Fig. 11) . . . . *A. dhanoultiensis*, n. sp.

Anapeptamena albipes Konow
(Figs. 1, 4, 9)

Anapeptamena albipes Konow 1898: 271.—Malaise 1944: 10–11 (Myanmar records).

Female.—Average length, 5.0 mm. Black with tegula and legs, except infuscated apical tarsal segments, yellow to whitish. Wings hyaline; costa, stigma, and venation dark brown to black.

Antennal length 2× head width; pedicel 2× longer than its apical width, almost as long as scape; segment 3 longer than 4, as 8:7. Anterior margin of clypeus subtruncate, labrum broader than long, as 2:1, with rounded anterior margin (Fig. 1); malar space equal to half diameter of front ocellus; inner margins of eyes parallel in middle, faintly converging below; LID:IDMO:EL = 2.0:2.4:1.9; OOL:POL:OCL = 1.7:1.0:2.0. Frontal area slightly higher than level of eyes; supraantennal tubercles and frontal ridges indistinct, without transverse ridge to inner margin of eye; supraantennal pits distinct and removed from antennal sockets by a distance equal to diameter of pit; median fovea indistinct; circum- and interocellar furrows distinct, postocellar furrow indistinct; postocellar area subconvex, broader than long (5:4 at maximum width). Mesoscutellum subconvex, appendage not carinate. ITD:ICD = 3.5:1.0. Tarsal claws as in Fig. 4. IATS:MB:OATS = 2.0:5.5:1.8. Abdomen with light golden pubescence. Lancet not distinctly narrowing toward apex, lateral teeth above serrulae distinct, with about 7 serrulae (Fig. 9).

Male.—Unknown.

Material examined.—INDIA: West Bengal: Darjeeling, 2200 m, 26.5.1989, coll. M.S. Saini (1 ♀, PUNJ); Sikkim: Gangtok, 1550 m, 14.5.93, coll. M.S. Saini (1 ♀, USNM); Khasia Hills (holotype ♀).

Distribution.—India (West Bengal, Sikkim); Myanmar (Kambaiti at 2000 m, close to the Yunnan frontier [Malaise 1944]).

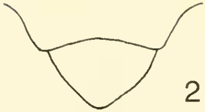
Type.—The holotype female is at the Deutsches Entomologisches Institut, Eberswalde, Germany, labeled "Khasia Hills, Assam," "coll. Konow," "Holotypus [red]," "Anapeptamena albipes Knw., Assam," "TYPUS [red]," "Coll. DEI Eberswalde." The head is glued onto a piece of cardboard on the same pin; the antennae are missing.

***Anapeptamena darjeelingensis* Saini, Smith, and Saini, new species**
(Figs. 2, 5, 10)

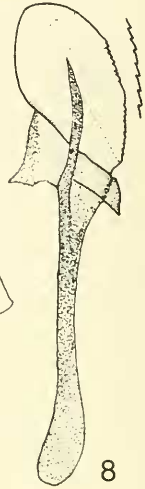
Female.—Length, 5.0 mm. Black with labrum, tegula, coxae (except extreme bases), midleg (except last tarsal segment), and hind leg (except lightly infuscated apical 3 tarsal segments) yellow to whitish. Wings subhyaline; costa, stigma, and venation dark brown to black.

Antennal length 2× head width, pedicel 2× its apical width, almost as long as scape; segment 3 longer than 4, as 5:4. Anterior margin of clypeus slightly emarginate; labrum about as long as broad, with acuminate anterior margin (Fig. 2); malar space linear; inner margins of eyes parallel in middle, faintly converging below; LID:IDMO:EL = 2.0:2.4:2.1; OOL:POL:OCL = 1.5:1.0:1.5. Frontal area slightly higher than level of eyes; supraantennal tubercles indistinct but continue posteriorly similar to somewhat prominent frontal ridges; in middle, frontal ridge laterally connected to inner margins of eye by a low transverse ridge; supraantennal pits distinct and removed from antennal sockets by a distance equal to diameter of pit; median fovea distinct and gently curved in its posterior half with bottom almost flat; interocellar furrow distinct, circum- and postocellar furrows indistinct; postocellar area subcon-


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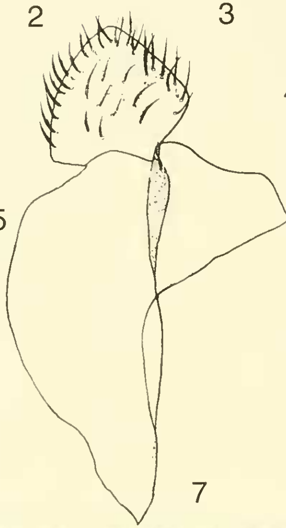

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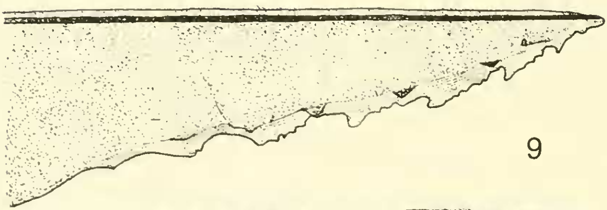

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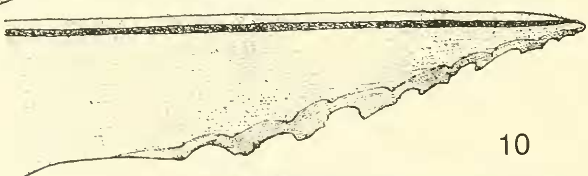

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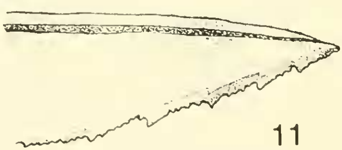

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vex, broader than long as 5:4 at its maximum width. Mesoscutellum subconvex, appendage not carinate. ITD:ICD = 4.0:1.0. Tarsal claws as in Fig. 5. IATS:MB:OATS = 2.0:6.0:1.8. Abdomen with brownish golden pubescence. Lancet strongly narrowing toward apex, lateral teeth above serrulae indistinct, with about 8 serrulae (Fig. 10).

Male.—Unknown.

Type.—Holotype ♀, West Bengal: Darjeeling, 2200 m, 8.5.1983, coll. M.S. Saini.

Distribution.—India (West Bengal).

Etymology.—The species name is derived from the type locality.

Anapeptamena dhanoultiensis Saini, Smith, and Saini, new species
(Figs. 3, 6–8, 11)

Female.—Length, 4.2 mm. Black with tibiae yellow and rest of legs fuscous. Wings lightly, uniformly infumated; costa, stigma, and venation brown.

Antenna (apical 2 segments missing) with pedicel 1.5× longer than broad, as long as scape, segment 3 longer than 4, as 4:3. Anterior margin of clypeus shallowly roundly emarginate; labrum broader than long, as 2:1 with rounded anterior margin (Fig. 3). Malar space linear. Inner margins of eyes converging below; LID:IDMO:EL = 2.0:2.5:2.0; OOL:POL:OCL = 1.3:1.0:1.0. Frontal area almost same height as eyes; supraantennal tubercles and frontal ridges indistinct; supraantennal pits distinct and removed from antennal sockets by 1.75× diameter of pit; median fovea indistinct in its posterior half and in anterior half represented by a deep median supraantennal pit; without transverse ridge extending to inner margin of eye; circum- and interocellar furrows distinct, postocellar furrow indistinct; postocellar area subconvex, broader than long, as 2:1 at its maximum width. Mesoscutellum flat, appendage not carinate. ITD:ICD = 4.0:1.0. Tarsal claws as in Fig. 6. IATS:MB:OATS = 2.0:7.5:1.6. Abdomen with brownish yellow pubescence. Lancet short, not strongly narrowing toward apex, without lateral teeth above serrulae, with about 6 serrulae (Fig. 11).

Male.—Average length, 4.5 mm. Similar to female except apical halves of coxae, basal half of fore- and midfemora, inner surface of hind femur on basal half, and apical tarsal segments black. Supraantennal pits removed from antennal sockets by 0.5× diameter of a pit. Genitalia as in Figs. 7, 8; harpe triangular, pointed at apex; parapenis produced into a narrow, rounded lobe at apex; penis valve oblong, finely serrate on dorsoapical margin.

Types.—Holotype ♀, Uttar Pradesh: Dhanoulti, 2000 m, 25.7.1993, coll. M.S. Saini. Paratypes: Same data as holotype except 3.6.1983 (2 ♂, PUNJ, USNM).

Distribution.—India (Uttar Pradesh).

Etymology.—The name is derived from its type locality.

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Figs. 1–11. *Anapeptamena*. 1–3, Clypeus and labrum. 1, *A. albipes*. 2, *A. darjeelingensis*. 3, *A. dhanoultiensis*. 4–6, Tarsal claw. 4, *A. albipes*. 5, *A. darjeelingensis*. 6, *A. dhanoultiensis*. 7, Male gonoforceps of *A. dhanoultiensis*. 8, Male penis valve of *A. dhanoultiensis*. 9–11, Female lancets. 9, *A. albipes*. 10, *A. darjeelingensis*. 11, *A. dhanoultiensis*.

Literature Cited

Cameron, P. 1899. III. Hymenoptera Orientalis, or contributions to a knowledge of the Hymenoptera of the Oriental Zoological Region. Part VIII. The Hymenoptera of the Khasia Hills. First paper. Memoirs and Proceedings of the Manchester Literary and Philosophical Society 43: 1–51.

Konow, F. W. 1898. Neue Chalastogastra-Gattungen und Arten. Entomologische Nachrichten 24: 268–282.

———. 1900. Neuer Beitrag zur Synonymie der Tenthredinidae. Wiener Entomologische Zeitung 19: 101–112.

Malaise, R. 1944. Entomological results from the Swedish Expedition 1934 to Burma and British India. Arkiv för Zoologi 35A: 1–58.

———. 1963. Hymenoptera Tenthredinoidea, subfamily Selandriinae, key to the genera of the world. Entomologisk Tijdskrift 84: 159–215.